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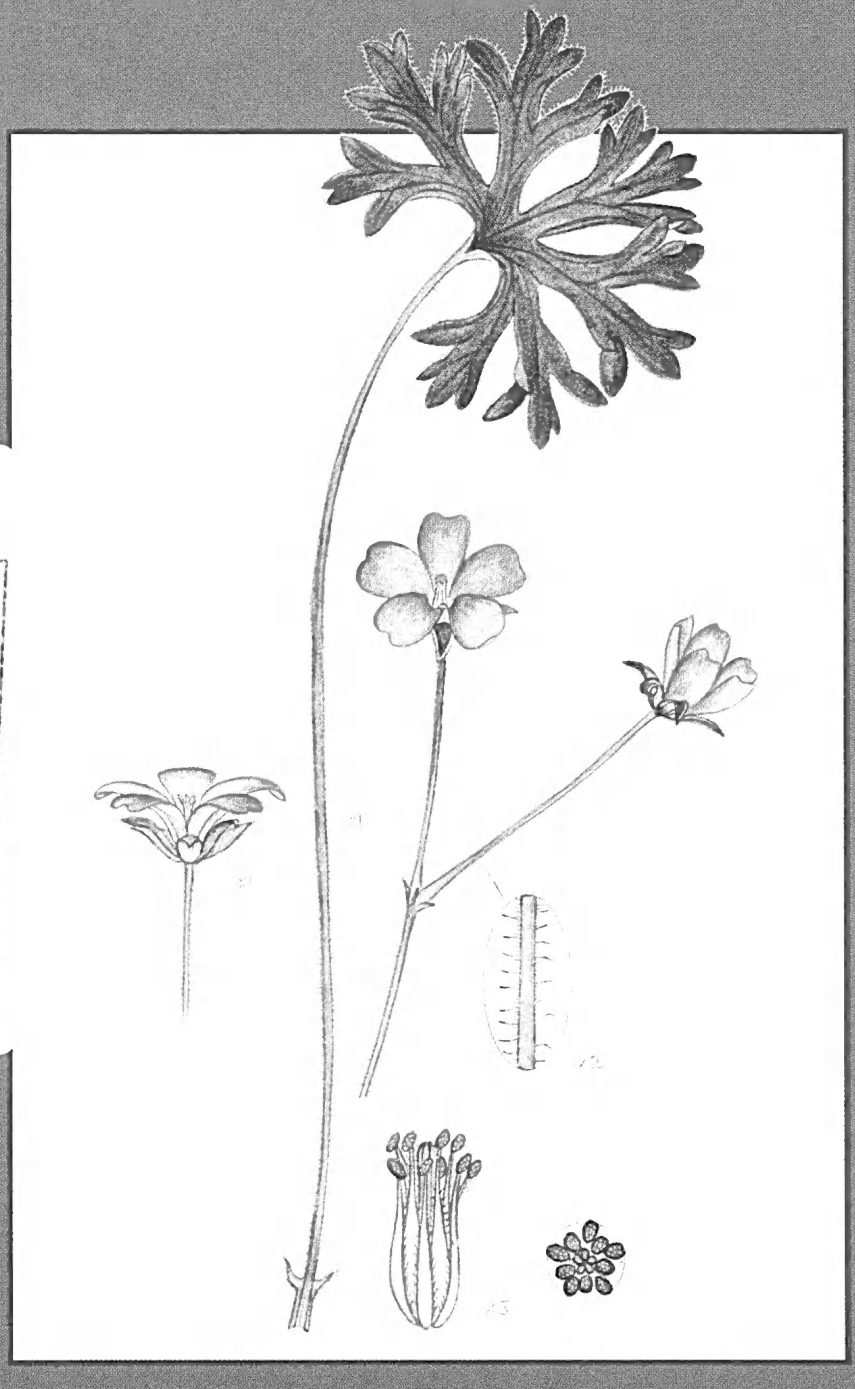
Danthonia

Newsletter of the Australian Network for Plant Conservation



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Regular Features

ANPC Inc. Mission Statement

"To promote and develop plant conservation in Australia"

Contributing to *Danthonia*

Danthonia is a forum for information exchange for all those involved in plant conservation: please use it to share your work with others. Articles, information snippets, details of new publications or research, and diary dates are welcome. The deadline for the March 2003 issue is the 10th of February 2003.

Authors are encouraged to submit images with articles or information. Please submit images as clear prints, slides, drawings, or in electronic format. Electronic images need to be at least 300 dpi resolution, submitted in at least the size that they are to be published, in tif, jpg or gif format.

Please send typed or handwritten articles, no more that 2 A4 pages, by fax, mail, email, or on diskette. If sending by email, please send as a MS Word (2000 compatible) or rich text format attachment to: anpc@anbg.gov.au.

Danthonia Editors

Laura Vallee and Jeanette Mill

Thanks to: Siobhan Duffy, Roger Good, Judy West, Steve Douglas, Jane Burkitt and Lyn Meredith.

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Internal layout by Laura Vallee
Covers designed by Siobhan Duffy

Front cover: *Geranium* sp. 1 was known from only two specimens in Victoria and had not been seen since 1903. It was thought to have become extinct until it was rediscovered in 1999 during surveys of the outer Melbourne area. *Geranium* sp. 1 was found in the Geelong region by the City of Greater Geelong's Biodiversity Study. It is the feature species of the ANPC National Conference in February 2003.

Illustration Enid Mayfield © 2002

The ANPC's Role in Implementing the Global Strategy for Plant Conservation

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Few would argue of the need for action to conserve the world's plant biodiversity. The Rio Earth summit of 1992 provided a clear mandate to the world—plant biodiversity was and still is dwindling at an alarming rate. Action was needed then and we witnessed innovations such as the Convention on Biological Diversity deliver words about a better future for the world's biodiversity.

Then in August 1999 over 5000 botanists from 100 countries gathered in St Louis, Missouri, at the XVI[th] International Botanical Congress. In a Congress resolution, delegates recognized that as many as two-thirds of the world's plant species were in danger of extinction in nature this century; and that plant diversity was essential to build sustainable, healthy and better lives for the future. The Congress called for plant conservation to be recognized as an urgent and necessary global priority in biodiversity conservation, and for the establishment of a United Nations mechanism to ensure global coordination.

The GSPC acknowledges the importance of recovery operations for species (this image: Diuris *translocation in Kings Park, Perth)*

A series of meetings with experts in the field of plant conservation followed, with the result that a Global Strategy for Plant Conservation (GSPC) was developed. A key difference between this strategy and all previous attempts to develop effective plant conservation is that the strategy is outcome focused. To ensure the outcomes are achieved a series of 16 practical targets are to be achieved by 2010 (see the targets printed below). Australia, along with most of the participating countries to the CBD, agreed to the GSPC in April 2002—a remarkable achievement for global plant conservation.

As a result of the GSPC now being a reality, the ANPC is working with a range of organisations to develop an understanding of a national approach to the GSPC. The 16 targets represent a new way of doing business in plant conservation for both the nation and the world. The GSPC provides the opportunity to look forward to the next decade with hope for conservation of Australia's rare and threatened plants and communities. Seizing the day and realising the delivery of the targets is the challenge for all conservation practitioners and the ANPC is ready to work on delivering effective, coordinated conservation. Further editions of the Journal will highlight national developments in the uptake of the GSPC and how you at the local level can participate.

The views expressed in this article are those of the author and do not represent the position of the Convention on Biological Diversity or its Secretariat.

Targets of the Global Strategy for Plant Conservation

The following is an extract from the Global Strategy for Plant Conservation, as adopted by the Conference of Parties to the Convention on Biological Diversity. The full strategy is published on the CBD Secretariat webpage: http://www.biodiv.org/decisions/default.asp?lg=0&m=cop-06&d=09

C. Targets

12. The global targets for the year 2010[(21)] are as follows, and their terms and technical rationale are appended to the present Strategy:

a. Understanding and documenting plant diversity:
   (i) A widely accessible working list of known plant species, as a step towards a complete world flora;
   (ii) A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels;
   (iii) Development of models with protocols for plant conservation and sustainable use, based on research and practical experience;

b. Conserving plant diversity:
   (iv) At least 10 per cent of each of the world's ecological regions effectively conserved;
   (v) Protection of 50 per cent of the most important areas for plant diversity assured;
   (vi) At least 30 per cent of production lands managed consistent with the conservation of plant diversity;
   (vii) 60 per cent of the world's threatened species conserved in situ;

(viii) 60 per cent of threatened plant species in accessible *ex situ* collections, preferably in the country of origin, and 10 per cent of them included in recovery and restoration programmes;

(ix) 70 per cent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained;

(x) Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems;

c. Using plant diversity sustainably:

(xi) No species of wild flora endangered by international trade;

(xii) 30 per cent of plant-based products derived from sources that are sustainably managed;

(xiii) The decline of plant resources, and associated indigenous and local knowledge, innovations and practices that support sustainable livelihoods, local food security and health care, halted;

d. Promoting education and awareness about plant diversity:

(xiv) The importance of plant diversity and the need for its conservation incorporated into communication, educational and public-awareness programmes;

e. Building capacity for the conservation of plant diversity:

(xv) The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy;

(xvi) Networks for plant conservation activities established or strengthened at national, regional and international levels.

13. These targets provide a framework for policy formulation and a basis for monitoring. National targets developed within this framework may vary from country to country, according to national priorities and capacities taking into account differences in plant diversity.

© Kingsley Dixon

Iconic species and ecosystems will have a real chance of conservation under the GSPC. This image: among the stand of the oldest recorded organism on earth, the Bristlecone Pine from California

National Coordinator's Report

Conference & Conservation Techniques Workshops

The program for the ANPC's Fifth National Conference and Plant Conservation Techniques Workshops, *Recovery: A Decade Towards a Biodiverse Future*, is shaping up extremely well. Dates for this event are Mon. 24th February–Sat. 1st March 2003 and it is being held in the beautiful Geelong Conference Centre, adjacent to the newly expanded Geelong Botanic Gardens.

Keynote speakers will be The Honourable John Landy, AC, MBE, Governor of Victoria; Carl Binning, Chief Executive, Greening Australia; Dr Michael Looker, Director, Trust for Nature; and Tim Allen, National Coordinator, Marine and Coastal Community Network.

In addition to the paper and poster program, delegates will have the opportunity to further tap the expertise of the assembled specialists in a series of around 16 practical Conservation Techniques Workshops. These workshops were tremendously well received at the last conference.

Look out for the provisional program. Depending on printing schedules, it will have already been posted to all members, or will be included as an insert in this issue.

Landscape Rehabilitation Course

Another exciting ANPC event occurring early in 2003 is the fourth in this series of ANPC training courses, sponsored by the NSW Environmental Trust. *Landscape Rehabilitation: Approaches and Techniques*, will be held in Yass, NSW from 4th–6th February. A range of high-calibre presenters has been secured for this course.

Annual General Meeting

The ANPC Annual General Meeting was held in November at the Australian National Botanic Gardens. The ANPC welcomes two new committee members; Robin Nielsen, the Director of the Australian National Botanic Gardens; and Tricia Hogbin, Senior Threatened Species Officer with NSW National Parks and Wildlife Service. Sincere thanks go to outgoing committee members: Mark Richardson, who is moving to London to work for Botanic Gardens Conservation International; Prof. Henry Nix, founding Chair of the ANPC Advisory Committee; Paul Scannell, Secretary and South West Slopes Regional Coordinator; and John Zwar, WMC Olympic Dam industry representative. The new committee is listed inside the front cover of *Danthonia*.

A motion to change the name of the newsletter was discussed, as the name *Danthonia* is now taxonomically outdated. The proposal to change the name to *Australasian Plant Conservation* was accepted.

Please contact the National Office if you would like any further information about the AGM, or any other item mentioned in this report.

To Translocate, or not to Translocate? That is the Question

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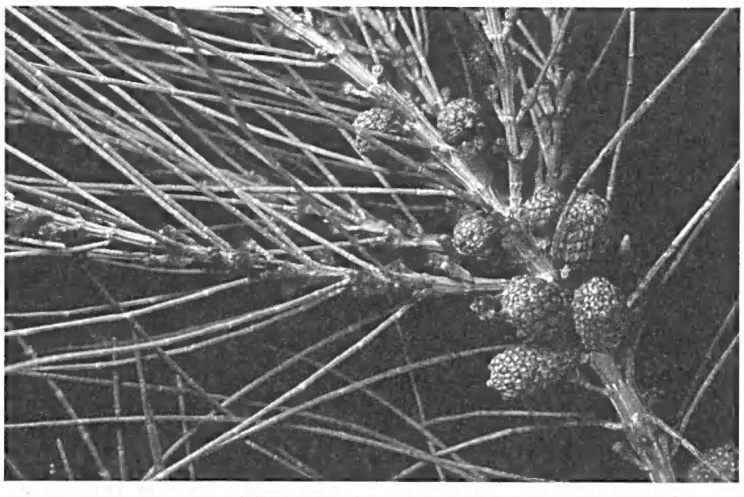
The upcoming revision of the Australian Network for Plant Conservation's Translocation Guidelines (ANPC Translocation Working Group, 1997) provides the perfect opportunity to reflect on the success and impact of the Guidelines. Over 800 copies of the Guidelines have been distributed to individuals and organisations both nationally and internationally. The Guidelines have helped increase awareness of the complexity of translocation and of the costly and long-term commitment required in order to maximise the likelihood of success. The Guidelines appear to have been well received and implemented. For example, within the NSW National Parks and Wildlife Service (NPWS), the Guidelines are more or less accepted as a defacto policy. However, I believe their main impact is that the question of whether or not to translocate is now actually being addressed.



Allocasuarina portuensis
© *Jaime Plaza*

Prior to the release of the Translocation Guidelines it was common practice, at least within NSW, for translocation to be proposed for threatened plant species before investigating the species' biology and before identifying and minimising causes of decline. For example, a review of 28 draft recovery plans for threatened plant species produced by the NSW NPWS prior to 1996 revealed that five proposed translocation as a recovery action. In all instances the recovery plan provided little justification for the translocation program, nor was it apparent that translocation was even necessary. For example, in the case of *Zieria prostrata*, the Recovery Plan proposed translocation; however there was little justification for the population enhancement program that followed (Hogbin & Peakall, 2000). Subsequent research revealed that the populations are stable and that population enhancement is not necessary, at least not in the immediate future. Indeed, the research revealed that the main factor limiting recruitment was the availability of small gaps in the vegetation that allow seedling establishment. Hence, the addition of mature plants during the translocation program may have decreased short-term susceptibility to environmental stochasticity, but would not have increased long-term stability, given that population growth would still be limited by gap availability. Therefore, if an increase in population size were deemed necessary in the future, a more cost-effective and potentially less evolutionarily disruptive alternative to translocation would be to attempt to promote recruitment by manipulating the availability of suitable gaps to allow seedling establishment.

It is clear that greater thought is now put into deciding whether or not translocation is necessary and that alternatives to translocation are being properly considered. For example, a review of threatened flora recovery plans produced post 1996 by the NSW NPWS reveals that of the 22 approved recovery plans (representing 34 plant taxa) and the seven draft recovery plans awaiting approval, only one lists translocation as a recovery action. Six recommend that the need for translocation may require further consideration or re-evaluation in the future. Given that translocation has the potential to be detrimental to the long-term survival of the taxon concerned (ANPC Translocation Working Group, 1997), it is reassuring that a recommendation of translocation is no longer rushed into without the necessary considerations.

The probability of success is increasingly being considered when deciding whether or not to translocate, as is the need to ensure the removal of threatening processes prior to translocation. For example, the endangered forb *Eriocaulon carsonii* is endemic to a small number of mound springs on the edge of the Great Artesian Basin and occurs in Queensland, South Australia and New South Wales. Within NSW the species is currently known only from a single spring within Peery National Park in the west of the state. The population is threatened by reduced spring flow and spring extinction due to excessive water use from the Great Artesian Basin

and potentially by trampling caused by feral herbivores and disturbance by pigs. The current draft recovery plan (NSW NPWS, 2002) acknowledges that *E. carsonii* is highly susceptible to extinction in NSW and that the establishment of additional populations elsewhere in the state would reduce this risk. Nonetheless, the recovery plan does not propose translocation as a recovery action at present, given that the main threatening process, unsustainable use of the Great Artesian Basin, has not been removed. Translocation is considered unlikely to succeed until this threat is removed.

Of course, there are many instances where translocation is the only option available for the continued survival of a species in the wild. For example, the endangered dioecious shrub *Allocasuarina portuensis* is now represented in the wild by a single female plant. Increasing population size via translocation is one of the objectives of the current recovery plan (NSW NPWS, 2000). Approximately 100 individuals from an *ex situ* collection have been reintroduced in recent years. There are many other such examples where extinction in the wild is inevitable without translocation, particularly in regions of high species diversity and endemism that have been highly cleared and degraded, such as in the south-west of Western Australia (Coates & Atkins, 2001). However, given the increasing number of such critically endangered species, the limited resources available for plant conservation, the complexity of the translocation process and the fact that translocation is still largely an experimental technique, conservation managers will have to make some challenging decisions about which species to translocate.

The current Translocation Guidelines specifically state that they were '...not designed to assist in making a decision about translocating a taxon. They have been designed to provide assistance once translocation has been considered as a management option.' The upcoming revision of the Guidelines is an opportunity to attempt to provide guidelines for such decision making. There has been considerable research conducted in recent years on maximising the success of translocation programs and it is important that the outcomes of this research reach those conservation practitioners undertaking, or deciding whether to undertake, translocation programs.

References

ANPC Translocation Working Group 1997, *Guidelines for the Translocation of Threatened Plants in Australia*, Australian Network for Plant Conservation, Canberra.

Coates, DJ and Atkins, KA 2001, 'Priority setting and the conservation of Western Australia's diverse and highly endemic flora', *Biological Conservation,* vol. 97, 251–263.

Hogbin, PM and Peakall, R 2000, 'The effective management of threatened flora: lessons from the case of *Zieria prostrata*', *Pacific Conservation Biology*, vol. 6, 238–44.

NSW NPWS 2000, Allocasuarina portuensis *Recovery Plan*, NSW National Parks and Wildlife Service, Hurstville.

NSW NPWS, 2002, *Salt Pipewort* (Eriocaulon carsonii) *Draft Recovery Plan*, NSW National Parks and Wildlife Service, Hurstville.

Does this Look Familiar?

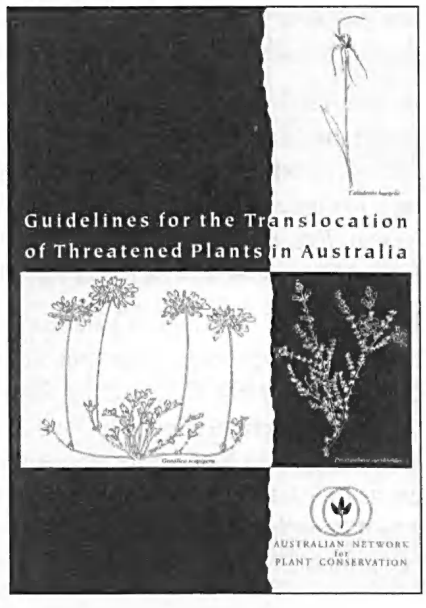
It's time... the ANPC's *Guidelines for the Translocation of Threatened Plants in Australia* is due to be revised!

Five years after the first edition was published there have been a lot of new developments in plant conservation in Australia, particularly to do with when translocation is used to assist in the recovery of rare plants, who is responsible for planning and implementation, and what techniques are used.

A **workshop** has been scheduled at the ANPC National Conference in February 2003, to be used as a forum for **gathering comments on the existing guidelines, and suggestions for the revised edition**. This workshop will also be used to identify suitable topics for future guidelines and gather information for a centralised database of best practice guidelines.

See the Conference Program for more information (with this issue of *Danthonia* or sent to your mailbox separately) on the conference.

If you will not be able to attend the workshop, and would like to contribute to the guidelines review, please contact the National Office (details on p. 1).



Listing of the Christmas Island Spleenwort

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The Christmas Island Spleenwort, (*Asplenium listeri* C.Chr., Family Aspleniaceae), is a small, rare, lithophytic (growing on rocks or stone) fern that is endemic to Christmas Island. This fern currently exists in very low numbers in several locations and has recently been listed as a threatened species under the *Environment Protection and Biodiversity Conservation Act 1999*.

Asplenium listeri
© *Jeff Claussen*

Christmas Island is located in the NE Indian Ocean at 10°29'30" S: 105°38' E. It is approximately 135 square kilometres in area and rises to 361 m above sea level at its highest point. It has a central, gently undulating plateau that is connected to the coastline via a series of cliffs, terraces and slopes. Most of the coastline is composed of undercut limestone cliffs averaging 15 m in height. In simplistic terms, most of the undisturbed vegetation on Christmas Island can be categorised into a few vegetation types and these can be strongly correlated with soil depth. The main vegetation types are evergreen tall closed forest, semi-deciduous closed forest, deciduous scrub, and herbland.

A. listeri has short, arching or erect, pinnate fronds approximately 10 to 15 cm long with linear sori along its lateral veins. It occupies vertical faces of limestone cliffs or outcrops, particularly those facing the southeast. In dry periods it becomes desiccated and very hard to detect, but after rain it quickly rehydrates.

A. listeri is named after Joseph Jackson Lister, an Englishman educated in Cambridge, who visited Christmas Island after embarking at Colombo (Sri Lanka) as a volunteer naturalist on board the H.M.S. Survey Vessel, *Egeria*. Lister first discovered the small fern near Flying Fish Cove in 1887 (Du Puy, 1993).

In 1897 C.W. Andrews, a palaeontologist of the British Museum, surveyed the island but did not find this species. However, in 1904 H.N. Ridley found one individual at Tom's Ladder in Flying Fish Cove during his survey (Du Puy, 1993). Both of these populations have ceased to exist. In 1988, Du Puy and Du Puy discovered a small population that remains extant and was last estimated to be composed of 50 individuals. In 2002 Holmes and Holmes (2002) discovered three other small populations scattered across the island. One was near the east coast, another near the south coast, and the third—composed of only six individuals—near the west coast . Two of these populations are in areas rarely visited by people.

Christmas Island has 213 native plant species, and 18 of these are endemic. These endemic species exist in a wide range of forms which include two trees, two shrubs, two pandans, one palm, two vines, three herbs, one grass, four orchids and one fern. They also occur in a variety of abundances from frequent to currently undetectable. Recently, eight new species were added to the flora list for Christmas Island after a survey was conducted by Holmes and Holmes (2002). Approximately 50 native plant species on Christmas Island have very limited distributions and population sizes in relation to the entire Australian Flora. Environment Australia is currently assessing the threats, population biology, vulnerability, and risk of extinction of these species.

A frond of Asplenium listeri, *illustrating the arrangement of the sori (assemblages of sporangia, which are spore sacs)*
© *Jeff Claussen*

References

Du Puy, DJ 1993, 'Aspleniaceae', in *Flora of Australia* 50: 554-558.

Holmes, J & Holmes, G 2002, Conservation Status of the Flora of Christmas Island, Indian Ocean. Report to Environment Australia.

A frond of the Christmas Island Spleenwort
© *Jeff Claussen*

The ANPC's Plant Conservation Manual

An update on progress so far...

What is the Manual?

The aim of this manual is to provide plant conservation practitioners with current, practical best-practice information on the conservation of threatened plants and communities in Australia.

The target audience for the manual includes all plant conservation practitioners, specifically: community groups (landcare, bushcare, catchment groups, etc.); recovery teams; government agencies; industry environment officers; land managers; land holders; environmental educators; and interested individuals.

Clearly, this is a very broad subject and it could be a huge job to cover all topics comprehensively. The focus for this stage of the manual is to summarise approaches; present detailed information when it is new or not widely accessible; and provide further reading and contact details in case people want more detail on something that *is* widely accessible. The manual will be loose-leaf, bound in a ring-binder and separated into modules. This will allow new sections to be added and old sections to be updated as required without having to reprint the whole publication.

How is it being done?

Content for the manual is drawn primarily from papers from ANPC training courses and workshops. Contributors include representatives from government agencies (e.g. NSW NPWS), industry, community groups, research institutions and others. An outline has been produced (see below) in consultation with many ANPC members and other specialists. Authors for most chapters are now updating or writing their papers for inclusion in the manual.

What's going in it?

The draft outline for the manual currently includes the following module headings, with section headings in italics:

Principles and ethics of conservation
Overview of Australian flora; Biological principles for plant conservation; Integrated plant conservation.

Conservation instruments and initiatives
International instruments and initiatives; National initiatives (incl. legislation); The listing process; The Global Strategy for Plant Conservation; Recovery Planning.

Getting started: information for conservation
Information necessary for conservation; Assessing rarity and threat; Survey techniques; Herbaria.

The role of genetics
Principles; Practical approaches.

In situ conservation
Principles; Population management; Habitat management; Threats; Rehabilitation; Translocation.

Monitoring and adaptive management
Principles and approaches; Managing environmental impacts.

Ecological communities
Definitions and instruments; Conservation and management.

Ex situ principles and techniques
Germplasm collection and storage; Germinating and propogating native seed.

Working together
Rationale; Community involvement; Partnerships—why and how.

Cryptogams
Fungimap; Distribution and diversity; Vouchering.

References and resources
Useful resources for plant conservation.

How can I contribute?

Does this outline cover all of the skills and knowlegde that you think you might need, or that you would have liked to have when you were starting out? Let us know! Some changes to the outline may be possible, and your suggestions will be very useful for guiding future additions and seeking funding for production.

Alternatively, you may be an expert in one of the areas listed (or another relevant area that has been left out) and wish to contribute by reviewing sections of the manual or writing a chapter.

Please contact the ANPC National Office, GPO Box 1777, Canberra ACT 2601
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Environmental TRUST
This project has been assisted by the NSW Government through its Environmental Trust

Rulingia procumbens Survey in Central-West New South Wales—Preliminary Results

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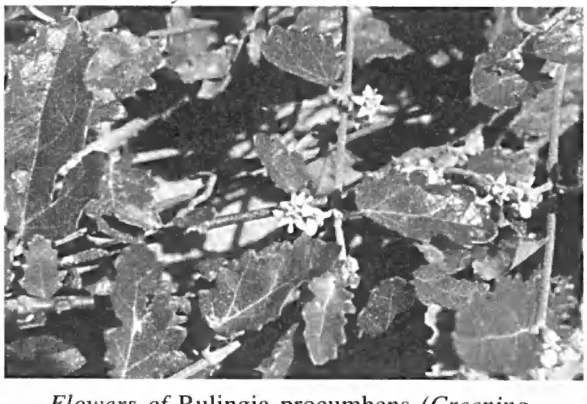
Rulingia procumbens – Creeping Kerrawang [Family Sterculiaceae] is described by Harden (2000) as a 'prostrate shrub with slender trailing stems to 30 cm long arising from woody stolons; with alternate, ovate to lanceolate leaves (2–5 cm) which have deeply crenate margins; and with small white flowers arranged in cymes.' The species grows in sandy sites, typically in dry sclerophyll open forest or woodland with a heath / myrtaceous understorey. It appears to be a fire ephemeral, often colonising areas following wildfires and other disturbances, but disappearing once other competitive vegetation has established. The species is rare in and endemic to New South Wales, being mainly confined to the Dubbo-Mendooran-Gilgandra region, but it has also been recorded in Pilliga, Narromine and Nymagee areas, Mount Kaputar National Park and more recently in the Sandy Hollow / Goulburn River district (Upper Hunter Valley) (Bell, 2001; Harden, 2000). There is a possibility (currently being investigated) that the plants found in the Sandy Hollow area represent a new taxon, as flower colour and habit are slightly different.



Flowers of Rulingia procumbens *(Creeping Kerrawang) – Goonoo State Forest*

Within New South Wales, *Rulingia procumbens* is listed as a Schedule 2 Vulnerable species under the *Threatened Species Conservation Act 1995*. Nationally, the species is listed as Vulnerable in the *Environment Protection and Biodiversity Act 1999*. It is also listed as a ROTAP (3V).

At the commencement of this survey, three distinct populations of *R. procumbens* were located in dry sclerophyll forest in a compartment of Goonoo State Forest (about 50 km north-east of Dubbo). This site had been subject to wildfire in late 1997. By February 1998, none of the subject plants were present at this site, though some plants were located at other sites in unburned areas where they had been found previously. By April 1998, hundreds of seedlings were recorded in the burnt areas but none remained at the unburnt sites.

Numbered stakes were used to identify 127 seedlings. Measurements were taken at three-monthly intervals from May 1998 to January 2000, and then at six-monthly intervals until January 2002 when most plants were seen to have died. Data measured for each plant included:

- Dimensions of the largest leaf
- Length of each trailing stem
- Reproductive status (flowering, budding or seeding)
- Distance to nearest plant and its height at the four cardinal points
- Per cent leaf litter, vegetative matter, bare ground, ash, or rock within a 0.5 m^2 quadrat.

Other data obtained included climate (monthly maximum and minimum temperatures, and monthly rainfall) from the Bureau of Meteorology; soil samples from each survey site and other sites with known populations; and surveys in sites adjacent to the unburned vegetation to establish whether Creeping Kurrawang was present and measure its relative abundance compared to that in the burned sites.

The three aims of the survey were:

1. To follow a number of plants through their life cycle to obtain data on seeding frequency, longevity, etc.
2. To see if the main influence on plant growth is disturbance (e.g. fire or physical ground disturbance) or climate
3. To see if soil characteristics are related to plant presence.

While the data are yet to be analysed, some preliminary conclusions can be made with regard to apparent trends:

- Plant growth fluctuated over time with stems often dying back to the central stolon in dry times, and then regrowing after rain.
- Individual stems grew to lengths of 106 cm, which

is three times that noted in Harden (2000).

- Plants (particularly leaves) could be damaged by frosts, but this was not enough to kill the plant.
- Grazing seemed to have little direct impact on the plants but some damage was caused by emus and macropods walking on them during grazing.

This study showed that longevity of *Rulingia procumbens* is approximately 3.5 years in Goonoo State Forest, during which time plants flower and set seed an average of four times within the months of October to February. It is yet to be determined if the short life span is an artefact of climate, such as the onset of drought conditions, or a response to competition from other regenerating vegetation following a fire event. If the latter is true, this raises the question of whether *R. procumbens* is a fire ephemeral, a characteristic of some other threatened flora such as *Monotaxis macrophylla*.

All populations known occurred on sandy soil substrates, typically of silty sand topsoils grading to clayey sands at depth, with low pH (4.5–5.0), moderate to high levels of organic carbon (expected after fires), very low electrical conductivity and high to very high aluminium toxicity levels. The highest abundance of plants in the Dubbo district was in areas associated with open ground (e.g. disturbance after fire, no groundcover, graded roadsides and open road batters). Extensive searches revealed no evidence of plants growing in undisturbed and intact forest adjacent to existing populations. The correlation between plant presence and disturbance (particularly fire) was also found by surveys conducted by the National

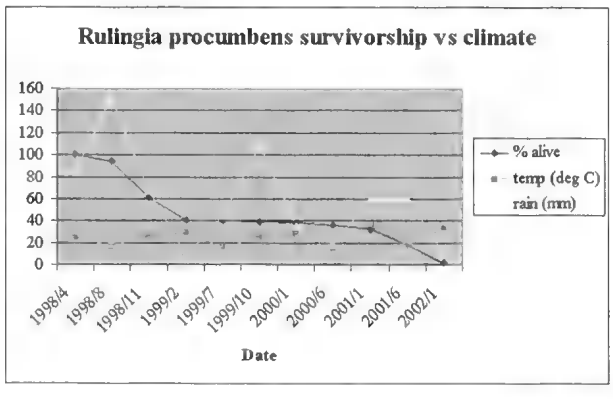


Diagram 1

Parks and Wildlife Service in the Pilliga district after wildfires in 1998 where *Rulingia procumbens* was noted in abundance on burned areas with no groundcover (D. Beckers pers. comm. 1999).

While there has been no definitive examination of the main influences on plant growth to date, preliminary indications are that rainfall has more influence than temperature. Diagram 1 shows a more significant correlation between plant survivorship and mean monthly

Typical burnt habitat of Rulingia procumbens *(Creeping Kerrawang) in Goonoo State Forest*

rainfall [r = 0.67, df = 9, p = 0.05] than mean monthly maximum temperature [r = -0.28, df = 9].

It will be interesting to identify whether climate (rainfall, temperature) or surrounding vegetative growth (shade, competition for soil nutrients) have the greatest effect on plant longevity. For instance, if *Rulingia procumbens* is found to rely more on disturbance factors for its survival, then there are significant implications for interventionist management of vegetation at an appropriate interval in order to promote the growth and reproduction of the species.

Additional research needs to be conducted on the viability and longevity of *Rulingia* seed in the soil and responses of other organisms in the ecosystem to determine the optimum, maximum and minimum frequency of disturbance events. The lifespan of plants in this survey suggests that a frequency of greater than 4 years is required.

References

Bell, SAJ 2001, 'Notes on the distribution and conservation status of some restricted plant species from sandstone environments of the upper Hunter Valley, New South Wales', *Cunninghamia*, vol. 7, no. 1, 77–88.

Harden, GJ (ed.) 2000, *Flora of New South Wales,* vol. 1, rev. edn, New South Wales University Press, Kensington.

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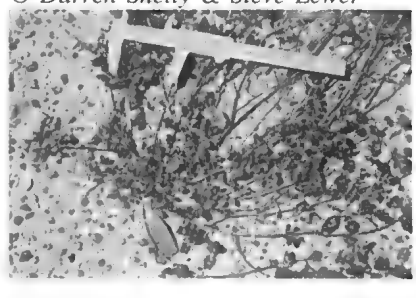


Measuring Rulingia procumbens*—Goonoo State Forest*

Research Roundup

Baker, R.T. 2002. **Environmental impact assessment guidelines: *Prostanthera discolor*.** *Lasianthos: The Labiates of Australia.* (3): 27.

Brooks, T. *et al.* 2002. **Habitat loss and extinction in the hotspots of biodiversity.** *Conservation Biology.* 16(4): 909-923.

Clark, P.J. 2002. **Experiments on tree and shrub establishment in temperate grassy woodlands: seedling survival.** *Austral Ecology.* 27(6): 606-615.

Curtin, C.G. 2002. **Integration of science and community-based conservation in the Mexico/U.S. Borderlands.** *Conservation Biology.* 16(4): 880-886.

Denham, A.J. & Auld, D. 2002. **Flowering, seed dispersal, seed predation and seedling recruitment in two pyrogenic flowering resprouters.** *Australian Journal of Botany.* 50(5): 545-557.

Jurskis, V. 2002. **Short note: restoring the prepastoral condition.** *Austral Ecology.* 27(6): 689-690.

Keith, D.A. & Henderson, M.K. 2002. **Short note: restoring the prepastoral condition: Response to Jurskis.** *Austral Ecology.* 27(6): 691-693.

Lipow, S.R., Bernhardt, P. & Vance, N. 2002. **Comparitive rates of pollination and fruit set in widely separated populations of a rare orchid (*Cypripedium fasciculatum*).** *International Journal of Plant Science.* 163(5): 775-782.

Lloyd, S., Ayre, D. & Whelan, R. 2002. **A rapid and accurate visual assessment of nectar production can reveal patterns of temporal variation in *Banksia ericifolia* (Proteaceae)** Australian Journal of Botany 50(5): 595-600.

Prober, S.M., Lunt, I.D. & Thiele, K.R. 2002. **Determining reference conditions for management and restoration of temperate grassy woodlands: relationships among trees, topsoils and understorey flora in little-grazed remnants.** *Australian Journal of Botany.* 50(6): 687-697.

Electronic Addresses

NRMtalk

NRMtalk is an email discussion list for communicators working in the natural resource management, water and environment fields in Australia and New Zealand. It is an informal networking tool, and any member (subscriber) can send email to all other members of the list. NRMtalk was establishedfollowing a conference of Murray-Darling Basin communicators in Canberra in November 2001.

To subscribe to the list send a blank email to:
nrmtalk-subscribe@emailmedia.com.au

EPBC Unit

The EPBC Unit is a joint project of the World Wide Fund for Nature and the Humane Society International to support the implementation of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for the benefit of the environment. The website contains fact sheets, links to relevant sites and a report on the first two years of the operation of the EPBC Act titled *Environment Protection and Biodiversity Conservation Act 1999: an overview of the first two years*. The EPBC Unit also sends updates on listings, referrals and assessments under the EPBC Act to an email list, which can be joined on the website or by sending a blank email to: epbc-info-subscribe@yahoogroups.com. For more information contact Andrew Macintosh Ph: 02 6257 4010 Fax: 02 6257 4030 Email: amacintosh@wwf.org.au

http://www.wwf.org.au/epbc

Fungi of Australia

The Australian Biological Resources Study (ABRS) has recently produced a web page which uses two high quality posters on Australian fungi as its base ('Fungi and their kingdoms' and 'Fungi and the environment'). Links take the user to detailed information on classification of fungi (including an explanation of how fungi are classified and discussions of the kingdoms and divisions as defined in 'Fungi of Australia'), and on lifestyles of Australian fungi. The website includes some amazing photographs, and useful diagrams to illustrate some aspects of fungi anatomy.

http://www.ea.gov.au/biodiversity/abrs/fungi/index.html

Ecological Management and Restoration Website

Ecological Management and Restoration is a relatively new (into its third volume), management-style journal that features some of the most innovative projects from Australia and New Zealand. This journal aims to improve long-term restoration and management of ecosystems by providing an effective link between the findings of scientific research and actions of on-ground managers. This website contains information on subscriptions and submissions, full text of articles (for subscribers) and allows anyone to view the journal's table of contents.

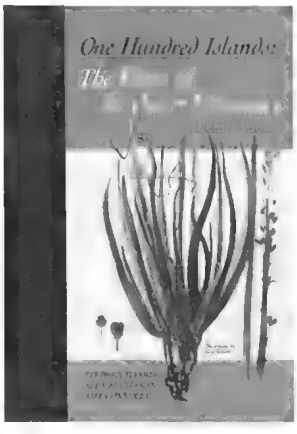
http://www.blackwellpublishing.com/journals/emr/

Publications and Information Resources

One Hundred Islands: the Flora of the Outer Furneaux

Stephen Harris, 2001
DPIWE, Tasmania
Reviewed by Prof. Henry Nix

Would that all our regional floras receive the same comprehensive treatment as this superb guide to the environments, vegetation and flora of the one hundred islands of the Outer Furneaux group in Bass Strait. This beautifully produced, hard-cover book with high-quality paper was the Tasmanian Government's contribution to the International Biodiversity Observation Year 2001-2002. The graphic design by Fiona Stewart complements the artwork by Anna Stewart and the colour photographs of the 437 vascular plants so far recorded form these wave-washed and wind-swept hill tops that emerge from the now submerged Bassian plain. The botanist authors deserve commendation for their concise descriptions with a minimum of specialist terminology. This book is a treasure. Buy it!



Contact Tasmanian Department of Primary Industries, Water and Environment, GPO Box 44, Hobart, Tas. 7001 Ph: 03 6233 8011 Fax: 03 6234 1335

AusGrass: Grasses of Australia

D Sharp & B Simon, 2002
CSIRO Publishing for Australian Biological Resources Study and Queensland Environmental Protection Agency

AusGrass is a large and comprehensive identification guide to the grasses of Australia. Using either interactive or dichotomous keys, *AusGrass* enables identification of any of the 1323 species of grass, native or naturalised, growing wild in Australia. This identification tool can be used with living plants or dry specimens, even when they are not in flower or fruit.

This CD and associated manual provides an easy-to-use interface with comprehensive fact sheets for each species, including a botanical description, notes on distribution and taxonomy, as well as images including diagnostic line drawings, scanned specimens, photographs and stereomicrographs.

For further information contact CSIRO Publishing, PO Box 1139, Collingwood, VIC 3066 Ph: 03 9662 7666 Fax: 03 9662 7555 Email: publishing@csiro.au

Publications section by Jane Burkitt

Managing and Conserving Grassy Woodlands

S McIntyre, JG McIvor & KM Heard, 2002
CSIRO Publishing

Managing and Conserving Grassy Woodlands describes principles that will enable landholders to maintain or increase productivity without compromising ecological sustainability, and at the same time maintaining a substantial proportion of the native flora and fauna. The book provides the technical basis underpinning the principles and explains the importance of planning at a landscape scale.

For further information contact CSIRO Publishing, PO Box 1139, Collingwood, VIC 3066 Ph: 03 9662 7666 Fax: 03 9662 7555 Email: publishing@csiro.au http://www.publish.csiro.au/

Brunonia Australis: Robert Brown and his Contribution to the Botany of Victoria

Helen Hewson, 2002
Centre for Plant Biodiversity Research

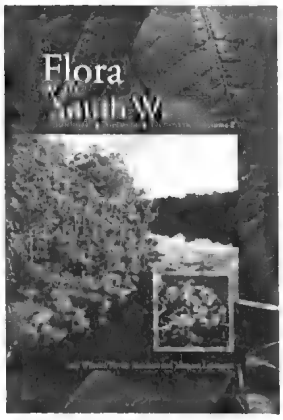
Robert Brown was the natural history collector on board the *Investigator* on Matthew Flinders' voyage to circumnavigate Terra Australis. Starting from Cape Leewin Brown traveled along the south coast of Victoria for four months. This book documents his travels and the plants he collected along the way.

For more information contact the Centre for Plant Biodiversity Research, GPO Box 1600, Canberra, ACT 2601 Ph: 02-62465108 Fax: 02-62465249 Email: cpbr-info@anbg.gov.au

Flora of the South West: Bunbury-Augusta-Denmark

J Wheeler, N Marchant & M Lewington, 2002
University of Western Australia Press in association with the Australian Biological Research Study and the Department of Conservation and Land Management

This book covers the vascular plants of the southern forests of WA and their associated riverine, wetland and coastal vegetation, including both native species and naturalised weeds. Volume one covers monocots and volume two is devoted to dicots. Individual species are described and illustrated with a line drawing.



Contact the University of Western Australia Press, 35 Stirling Hwy, Crawley, WA 6009 Ph: 08 9380 3670 Email: uwap@cyllene.uwa.au

Conferences & Workshops, Courses & Fieldwork

Landscape Rehabilitation: Approaches and Techniques

4th – 6th February 2003, Yass NSW

The aim of this course is to improve the conservation outcomes of rehabilitation activities, and it is suitable for anyone involved in or wishing to be involved in rehabilitation projects including industry environmental officers, coordinators and members of community groups, conservation agency employees and land owners/managers. Content will include understanding rehabilitation, rehabilitation planning, Landscape Function Analysis, rehabilitation techniques, genetics and rehabilitation, translocation, and formulating a rehabilitation plan. This workshop is part of the ANPC's current training program, which has been assisted by the New South Wales Government through its Environmental Trust.

For more information contact Laura Vallee, ANPC National Office, GPO Box 1777, Canberra, ACT 2601. Ph: 02 6250 9523 Fax: 02 6250 9528
Email: anpc@anbg.gov.au

Recovery: a Decade Towards a Biodiverse Future

24th February – 1st March 2003, Geelong Vic.

This 5th National Conference of the Australian Network for Plant Conservation represents a key point in scene setting for conservation activities by canvassing leading-edge techniques and principles in plant conservation. The conference format includes paper presentations, poster displays, workshops and field trips. The program also includes two days of Conservation Techniques Workshops (practical, focused workshops on plant conservation issues), which were very popular at the last ANPC National Conference. Conservation Techniques Workshop topics include multi-species recovery, assessing rarity and threat, rare plant translocations, and seed banking and germination. Keynote speakers include Carl Binning and the Hon. John Landy.

For more information contact Jeanette Mill, ANPC National Office, GPO Box 1777, Canberra, ACT 2601. Ph: 02 6250 9509 Fax: 02 6250 9528
Email: jeanette.mill@ea.gov.au.

Ancient Soils, New Solutions

28th – 29th March 2003, Sydney

This conference will look at the economic and social frameworks determining the current management of soils, with a view to promoting links between soils, habitats and biodiversity; and bringing together scientists, policy makers and community members to discuss practical ways of addressing soil and biodiversity issues. Conference themes include soils and biodiversity, capacity of the land, economics of recovery, capacity of the people; and government policy. Speakers include Dr Steve Cork and Brian Scarsbrick.

For more information contact Salirian Claff, Soils Habitat and Biodiversity Project Officer, Nature Conservation Council of NSW, Level 5, 362 Kent St, Sydney, NSW 2000. Ph: 02 9279 2466 Fax: 02 9279 2499 Email: scalff@nccnsw.nsw.org.au.

Tasmania Experience

2nd – 7th February and 2nd – 7th March 2003, Tas.

Organised by Conservation Volunteers Australia and the Australian Bush Heritage Fund, these eco-tours involve monitoring programs, weed control activities and flora and fauna surveys at the Liffey River Reserve, Friendly Beaches Reserve and Maria Island.

For more information contact CVA Ph: 1800 032 501 Email: info@conservationvolunteers.com.au

National Landcare Conference

28th April – 1st May 2003, Darwin

Subtitled 'Respecting values—working and learning together' this conference offers the opportunity to discuss and debate the broad range of issues associated with the Landcare movement in Australia. Conference themes include: building capacity and working with diverse cultures; social and economic aspects of natural resource management; managing land remote from urban centres; and international landcare.

For more information contact the Conference Secretariat, Desliens Conference and Event Management, GPO Box 2455, Darwin, NT 0801. Ph: 08 8941 0388
Fax: 08 8981 8382 Email: dcem@desliens.com.au.

2nd National Fungimap Conference

15th – 20th May 2003, Rawson Village Vic.

The Fungimap scheme aims to map the distribution of species of Australian mushrooms, toadstools and other fungi using information sent in by volunteers across Australia. This second national conference will be an opportunity to hear knowledgeable speakers and discuss the Fungimap scheme. The conference also includes three days of morning field trips followed by afternoon fungi identification workshops. Places are limited, so get in quickly!

For more information contact the Fungimap coordinator Gudran Evans, Royal Botanic Gardens Melbourne, Birdwood Ave, South Yarra, Vic. 3141 Ph: 03 9252 2374
Email: fungimap@rbg.vic.gov.au

ANPC Regional Groups

NSW South-West Slopes Region

Paul Scannell, Albury Botanic Gardens
Ph: (02) 6023 8769 Fax (02) 6023 8166 pscannell@alburycity.nsw.gov.au

NPWS Crimson Spider Orchid Recovery Plan

This year we were fortunate to have several partnerships develop, which have enabled extra surveys and investigations to be carried out.

The community continues to be reminded by media and newsletters of the rare plants they once knew to be abundant in the 1940s and 50s and several people have called with their recollections of locations.

Three TAFE students, seeking work placements for their course requirements, were trained up in identifying *Caladenia concolor* and given priority areas for survey. Valuable historic data collection and ground truthing were carried out and recorded in four areas. Many thanks to Rebecca, Anita and Richard on the camera.

Twin-flowered stem of Caladenia concolor

The survey this year in Albury found no new plants and this may have been due to a lack of rain from April to June. We will continue to use indicator species in our area to see which species' emergence mirrors that of the *Caladenia concolor*.

Communications will continue with the group caring for the Crimson Spider Orchids at the Chiltern Box – Ironbark National Park, to improve our knowledge of these highly threatened marvels.

Future Planning

City of Albury are working closely with NPWS on several projects, including:

- Bushfire management planning of Asset Protection Zones
- Biodiversity strategy for Albury to enable long-term planning for better outcomes
- Garden Guide for Albury, highlighting bush-friendly local natives and exotics.

All of these projects are looking at the best possible outcomes for White Box,Yellow Box and Blakely's Red Gum as an endangered ecological community, the Regent Honeyeater, Turquoise Parrot, Crimson Spider Orchid and *Senecio garlandii*.

New Find

Damian Michael, wildlife biologist, has recently discovered the Pink Tailed Worm Lizard in the Albury Hills and is working closely with us on all vegetation related matters. Some actions—like the use of control burning, weed removal and vegetation clearance for bushfire management—need to consider the possible location of threatened species by survey and their preservation by good management.

ANPC Regional Groups – Coordinator Contact Details

Sydney

Tracey Armstrong, Mount Annan Botanic Garden
Ph: 02 4634 7939
Email: tracey_armstrong@rbgsyd.nsw.gov.au

Illawarra and South Coast NSW

Paul Formosa, Wollongong City Council Ph: 02 4225 2638
Email: pformosa@wollongong.nsw.gov.au

Roger Hart, Booderee Botanic Gardens Ph: 02 4442 1122
Email: roger.hart@ea.gov.au

Tasmania

Andrew Smith, Parks and Wildlife Service Tasmania
Ph: 03 6233 2185
Email: andrews@dpiwe.tas.gov.au

NSW South West Slopes

Paul Scannell, Albury Botanic Gardens
Ph: 02 6023 8769
Email: pscannell@alburycity.nsw.gov.au

No ANPC Regional Group in your area?

ANPC Regional groups are run by enthusiastic volunteer coordinators. The ANPC National Office provides administrative support. Please contact the ANPC National Office (details on p. 1) if you are interested in establishing a new regional group.

And Finally...

Query about indigenous plant names

I have recently moved to the Hunter Valley from NZ to manage a riparian research and rehabilitation program, and would like to be able to incorporate the indigenous names for plant and animal species within the program. I have asked a number of people for indigenous names but nobody knows them. They have been lost in the last 200 years. There has been a renaissance over the last 10-15 years in NZ, with the indigenous names for species now used in preference to European names.

The species I am interested in at this point are:

Acacia filicifolia – fern leaved wattle
A. melanoxylon – blackwood
A. parvipinnula
A. salicina – cooba
Bursaria spinosa – black thorn
Callistemon salignus – pink tipped bottlebrush
Casuarina cunninghamiana – river (she) oak
C. glauca – swamp oak
Eucalyptus camaldulensis – river red gum
E. melliodora – yellow box
E. tereticornis – forest red gum
Hymenanthera dentata – tree violet
Leptospermum polygalifolium – creek tea tree
Melaleuca decora – white feather honeymyrtle
Melia azederach – white cedar
Rapanea variabilis – muttonwood
Toona ciliata – red cedar

I would appreciate people sending me information, including the language or area from which the name comes if possible. I appreciate that there will be different names depending on dialect, language, region etc., but it would be very useful/interesting to compile them. Thank you!

Please send any information to:

Craig Miller
Project Manager - Upper Hunter River Rehabilitation Initiative
Macquarie University
c\- NSW DLWC
PO Box 297
Muswellbrook
NSW 2333
Ph: 02 6542 1224
Fax: 02 6543 4164
Email: cjmiller@dlwc.nsw.gov.au

ANPC Membership List

Please note: the date in brackets indicates the calendar year that the member has joined or renewed for (January - December). Addresses and names of contact persons are available from the National Office.

Corporate Members

ACT Parks and Cons. Service, ACT (2001)
Alcoa World Alumina Australia, WA (2001)
Aust Institute of Horticulture Inc, NSW (2002)
Australian National Botanic Gardens, ACT (2002)
Aust Tree Seed Centre (CSIRO), ACT (2001)
Botanic Gardens of Adelaide, SA (2002)
Brisbane Botanic Gardens, QLD (2001)
Centre for Mined Land Rehabilitation, QLD (2002)
Centre for Plant Biodiv Rsch, ACT (2002)
Centre for Plant Conservation Genetics, Southern Cross Uni., NSW (2002)
City of Albury, Parks & Recreation Business Unit, NSW (2002)
Coffs Harbour City Council, NSW (2002)
Council of the City of Orange - Orange Botanic Gardens, NSW (2001)
CSIRO Publishing, VIC (2000)
Dept of Conservation and Land Management, WA (2002)
Dept Infrastructure, Planning & Environment, NT (2002)
Eurobodalla Native Botanic Gardens, NSW (1999)
Flecker Botanic Gardens, QLD (2000)
Forestry Tasmania, TAS (2000)
Geelong Botanic Gardens - City of Greater Geelong, VIC (2001)
Kings Park and Botanic Garden, WA (2001)
Macedon Ranges Shire Council, VIC (1999)
Maroochy Shire Council, QLD (2002)
NSW National Parks & Wildlife Service, NSW (2002)
Pacific Power, NSW (2000)
Qld Parks and Wildlife Service (Central Region), QLD (2002)
Queensland Herbarium, Dept of Environment & Heritage, QLD (2002)
Redland Shire Council, QLD (2002)
Roads and Traffic Authority, NSW (2001)
Royal Botanic Gardens Melbourne, VIC (2002)
Royal Botanic Gardens Sydney, NSW (2002)
Royal Tasmanian Botanical Gardens, TAS (2002)
Standing Committee on Forestry, ACT (2001)
Strathfield Municipal Council, NSW (2003)
Tasmanian Parks & Wildlife Service, TAS (2002)
Australian Arid Lands Botanic Garden, SA (2001)
Townsville City Council, QLD (2001)
WMC Olympic Dam Operations, SA (2002)
Wollongong Botanic Garden, NSW (2000)
Zoological Parks and Gardens Board of Victoria, VIC (2002)
Zoological Parks Board of NSW, NSW (2002)

International Associates

Canada
Canadian Botanical Conservation Network, (2002)
David Brackett, IUCN SSC, (2002)
Roy L Taylor, (2002)

Fiji
South Pacific Regional Herbarium, (2000)

Germany
Botanischer Garten und Botanisches, (2002)

India
Alexander Amirtham, (2002)
Indian Society for Conservation Biology, (2002)
Prof Suresh Pathiki, (2002)

Indonesia
Botanic Gardens of Indonesia (Kebun Raya), (2002)
Eka Karya Botanic Garden, (2002)
Indonesian Network for Plant Conservation, (2002)

New Zealand
Auckland Plant Collections Network, (2002)
David Given, (2003)
Neil Mitchell, (2001)
Timaru Botanic Gardens, (2002)
Wellington Plant Conservation Network, (2002)

Papua New Guinea
Paul Chatterton, (2002)

South Africa
John Donaldson, (2001)
National Botanical Institute, (2002)
Southern African Botanical Diversity Network (SABONET), (2002)

Sri Lanka
Zackeriya Mohamed Zarook, (2002)

Switzerland
Conservatoire et Jardin Botaniques, (2002)
Wendy Strahm, (2002)

UK
Botanic Gardens Conservation Intl, (2002)
IUCN/SSC UK Office, (2002)
PlantNet, (2002)
Royal Botanic Gardens Kew, (2002)
Timothy Walker, (2003)

United Arab Emerites

IUCN/SSC Re-introduction Specialist Group, (2002)

USA

Center for Plant Conservation, (2002)
Darren Touchell, (2002)
Don Falk, (2002)
ECO-SEA, (2002)
Georgia Endangered Plant Stewardship Network, (2002)
Missouri Botanical Garden Library, (2003)

Western Samoa

Vailima Botanic Gardens, (2002)

Community Groups

Association of Societies for Growing Australian Plants, NSW (2002)
Aust Plants Society - Central West Grp Inc, NSW (2002)
Aust Plants Society - Newcastle Grp Inc., NSW (2000)
Aust Plants Society - North Shore Group, NSW (2001)
Aust Plants Society - Northern Grp Inc, TAS (2001)
Aust Plants Society - Nowra Group, NSW (2002)
Aust Plants Society - South West Slopes, NSW (2003)
Aust Plants Society - SW Slopes, NSW (2000)
Aust Plants Society, NSW (2002)
Australasian Regional Assoc of Zoological Parks & Aquaria, NSW (2002)
Australian Association of Bush Regenerators, NSW (2002)
Australian Native Plant Society (Canberra Region), ACT (2002)
Australian Plants Society - Warringbah, NSW (2002)
Blue Mtns Wildplant Rescue Service, NSW (2001)
Burnley College, VIC (1999)
Burrendong Arboretum, NSW (2001)
Canberra and South-East Region Environment Centre, ACT (2002)
Community Biodiversity Network, NSW (2002)
Dept Land and Water Conservation, NSW (2002)
Friends of Eurobodalla Regional Botanic Gardens, NSW (2000)
Friends of Grasslands, ACT (2002)
Friends of Lismore Rainforest Botanic Gardens, NSW (2001)
Friends of Peter Francis Points Arboretum, VIC (2002)
Friends of the Australian National Botanic Gardens, ACT (2002)
Friends of the North Coast Regional Botanic Garden, NSW (1999)
Greening Australia - South West Slopes, NSW (2003)
Greening Australia South-West Plains, NSW (1999)
Greening Australia Ltd, ACT (2001)
Greening Australia NSW Inc., NSW (2002)
Hunter Region Botanic Gardens Ltd., NSW (2002)
Indigenous Flora and Fauna Association, VIC (2000)
Merri Creek Management Committee, VIC (2000)
Monarto Zoological Park, SA (2000)
Olive Pink Botanic Garden, NT (2003)
Pangarinda Arboretum Committee, SA (2002)
Royal Zoological Society of SA Inc., SA (2002)
SGAP - Dryandra Study Group, WA (2002)
SGAP - Ipswich Branch, QLD (2000)
SGAP - NSW Ltd - Blue Mountains Group, NSW (2002)
SGAP - Qld Region Inc., QLD (2002)
Stony Range Flora & Fauna Reserve, NSW (2002)
The Tasmanian Arboretum Inc, TAS (2002)
Threatened Species Network, NSW (2002)
Threatened Species Network, NT (2002)
Threatened Species Network, QLD (2002)
Threatened Species Network, SA (2002)
Threatened Species Network, TAS (2002)
Threatened Species Network, VIC (2002)
Threatened Species Network, WA (2002)
Trust for Nature, VIC (2001)
Victorian National Parks Association (2002)
Wildflower Society of WA - Northern Suburbs Branch, WA (2002)
Wildflower Society of WA Inc, WA (2000)
Wildlife Preservation Society of Australia Inc, NSW (2002)
World Wide Fund for Nature Australia, NSW (2001)

Individual Members

Gail Abbott, NSW (2003)
A/Prof Paul Adam, NSW (2002)
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Ian Anderson, ACT (2003)
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N Ashwath, QLD (2000)
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Ian Baird, NSW (2003)
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Tamera Beath, NSW (2002)
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Stephen Bell, NSW (2002)
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Dr Caron Blumenthal, NSW (2002)
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Max Bourke, ACT (2003)
Martin Bremner, NSW (2002)
Dr Barbara Briggs, NSW (2003)
Dr A.H.D. Brown, ACT (2002)
Claire Brown, ACT (2003)
Dianne Brown, NSW (2003)
Jerome Bull, WA (2002)
Louise Bull, NSW (2002)
John Burdett, ACT (2002)
Dr G Burrows, NSW (2001)
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Stephen Campbell, NSW (2002)
Geoff Carr, VIC (2002)
Irene Champion, QLD (2002)
John Clarkson, QLD (2002)
Dr Anne Clements, NSW (2002)
Anne Coates, WA (2002)
Dr Terry Coates, VIC (2002)
Anne Cochrane, WA (2002)
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Barry Collier, NSW (2002)
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Isobel Crawford, ACT (2001)
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Steve Douglas, NSW (2002)
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Alison Elvin, NSW (2000)
Salli Felton, NSW (2001)
Lance Fitzgerald, NSW (2001)
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Rae Suzanne Gerrard, SA (2000)
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Kaye Glennon, WA (2002)
Roger Good, NSW (2002)
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William Grattan, NSW (2001)
James Gray, NSW (2001)
Pamela Gray, NSW (2002)
Brad Green, NSW (2002)
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Fiona Hall, ACT (2002)
Joe Halloran, ACT (2002)
Kate Hammill, NSW (2002)
Gwen Harden, NSW (2002)
Daryl Harman, NSW (2001)
Mary Harris, NSW (2002)
Wayne Harris, QLD (2002)
Janelle Hatherly, NSW (2000)
Wendy Hawes, NSW (2002)
Marion Hawley, NSW (2002)
Rebecca Hayes, NSW (2002)
Els Hayward, TAS (2001)
Elizabeth Hinton, NSW (2002)
Patricia Hogbin, NSW (2002)
Keith Holmes, NSW (2001)
Bill Holzinger, NSW (2002)
Irene Horneman-Story, QLD (2001)

Elsie Howe, NSW (2002)
Sue Hughes, VIC (2002)
Ann Hunter, WA (2002)
John Hunter, NSW (2002)
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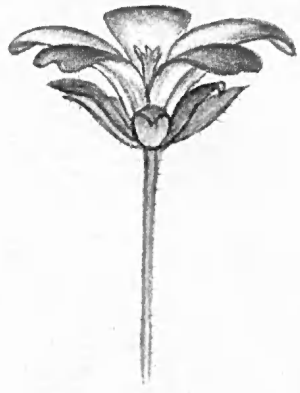

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